



# Copper Spot Prices and Stock Market Volatility

Anthony Mirafiore

Ernest C. Trefz School of Business, Department of Finance  
University of Bridgeport, Bridgeport, CT

## Abstract

Have you ever wondered if you could reduce your exposure to risk before it is too late? For decades individuals and scholars have been stumped trying to determine a key indicator for predicting stock market volatility. In this study the daily closing prices for the copper spot market were used to see if it has historically led the S&P 500. By using technical analysis techniques on a 5, 10, and 15 year chart of the copper spot market and the S&P 500 solid conclusions were able to come to light. Sixty six percent of the time over the past 15 years the spot market for copper has led the S&P 500. Key trends were also identified to foretell that the S&P 500 might experience a market correction in the near future while also giving us a price floor for copper prices. These are strong indicators, which if followed, could allow an organization to improve their bottom line and/or give them the potential to make a profit from future market fluctuations.

## Key Questions

- Can the Copper Market be used as a key indicator to help predict stock market volatility?
- Do Copper Spot Prices Lead the S&P 500?



## Main Arguments

### 5 Year Chart

- Jan. 2010 to July 2012 there is a head and shoulders effect occurring in the copper spot market. A key indicator that copper prices are beginning to reverse their recent uptrend pattern.
- QE announced to be coming to an end by Fed. U.S. Dollar appreciates against various currencies, copper becomes more expensive.
- S&P 500 broke its upward trend in late 2015.
- Causing emerging economies demand for copper to diminish as supply continues to grow.



### 10 Year Chart

- We can see the noticeable double top pattern with resistance at \$4 per pound. A double top indicates a top to the market.
- Between late 2006 and the beginning of 2008 copper prices began to see resistance around at \$4 per pound. Shortly after the stock market collapsed to usher in the 2008 financial crisis.



### 15 Year Chart

- The rising wedge for copper is leading the rising wedge for the S&P 500. A rising wedge is a strong bearish indicator where two trend lines are converging in an upward direction.
- If the S&P 500 breaks the lower trend line then we will see the S&P follow the same pattern we saw in 2011 with copper prices. The S&P 500 is due to go through the last stage of its normal cycle, therefore a correction is likely.



## Conclusion

This study concludes that copper prices do, in many cases, lead the stock market. Unlike other similar studies where researchers utilized various forms of statistical analysis to come to their conclusions, this study utilized technical analysis to arrive at conclusions. It was the ideal method for identifying the research question if the copper market has historically led the stock market. Utilizing well known chart patterns, the study identified that copper spot prices either led or, at the very least, gave strong indications of a reversal in a current pattern for the S&P 500. There was one case where the S&P 500 led the copper prices based on a down channel pattern from 2000 through 2003. Shortly after this occurrence a rising triangle was identified in the copper spot market, which is a bullish indicator. The stock market gained roughly 400 points over the next 2 years, a 33% increase. From the analysis conducted we can also see that the S&P 500 is about due for the next stage in its normal cycle, which is a market correction. Copper prices have been on a downward trend since 2011, highlighting diminishing global demand for the industrial commodity and global growth outlooks. In the same timeframe the S&P 500 has had a steady uptrend which it has recently broken. Additionally, a significant rising wedge, which is a bearish indicator, was identified. If the S&P breaks through the bottom trend line of the wedge we could see a decline in the S&P 500 for a period of time. This theory gains its support from the historical findings over the past 15 years. If we do see the S&P make a correction in the very near future it will further strengthen this study. The goal here was to provide support that copper prices can be used as a key indicator of stock market volatility. This study has provided sufficient evidence to support this relationship. Companies should take notice of these findings and utilize them to hedge against future fluctuations in the stock market.

## References

- Charts & Data. (n.d.). Retrieved November 26, 2015, from <http://www.infomine.com/ChartsAndData/ChartBuilder.aspx?z=f&gf=110563.USD.lb&dr=max&cd=1>
- Copper enters 2011 at record high - BBC News. (n.d.). Retrieved January 31, 2016, from <http://www.bbc.com/news/business-12098576>
- NEW YORK (CNNMoney) -- "The sky is falling! The sky is falling!" That's what copper traders must be thinking today. (n.d.). Copper prices are getting killed. Retrieved January 31, 2016, from [http://money.cnn.com/2011/09/22/markets/copper\\_commodities/](http://money.cnn.com/2011/09/22/markets/copper_commodities/)
- Technical Analysis. (n.d.). Retrieved November 25, 2015, from <http://www.investopedia.com/terms/t/technicalanalysis.asp>